Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-14 (Cancelled)

Claim 15 (currently amended): A [[An]] monoclonal antibody determined to be capable of specifically inhibiting the fusion of a macrophage-tropic primary isolate of HIV-1 to a CD4+ cell susceptible to infection by a macrophage-tropic primary isolate of HIV-1, but not a T cell-tropic isolate of HIV-1 to a CD4+ cell, using a method which comprises:

a) contacting (i) a first appropriate CD4+ cell, which is labeled with a first dye, with (ii) a cell expressing the HIV-1 envelope glycoprotein of the macrophage-tropic primary isolate of HIV-1 on its surface, which is labeled with a second dye, in the presence of an excess of the antibody under conditions which would normally permit the fusion of the CD4+ cell to the cell expressing the HIV-1 envelope glycoprotein on its surface in the absence of the antibody, the first and second dyes being selected so as to allow resonance energy transfer between the dyes;

b) exposing the product of step (a) to conditions which would result in resonance energy transfer if fusion has occurred; and

c) determining whether there is a reduction of resonance energy transfer, when compared with the resonance energy transfer in the absence of the antibody;

d) contacting (i) a second appropriate CD4+ cell, which is labeled with a first dye, with (ii) a cell expressing the HIV-1 envelope glycoprotein of a T-cell tropic isolate of HIV-1 on its surface, which is labeled with a

second dye, in the presence of an excess of the antibody under conditions which would normally permit the fusion of the CD4+ cell to the cell expressing the HIV-1 envelope glycoprotein on its surface in the absence of the antibody, the first and second dyes being selected so as to allow resonance energy transfer between the dyes;

e) exposing the product of step (d) to conditions which would result in resonance energy transfer if fusion has occurred;

f) determining whether there is a reduction of resonance energy transfer, when compared with the resonance energy transfer in the absence of the antibody; and

g) comparing the determination made in step (c) with the determination made in step (f), wherein a decrease in transfer in step (c) but not in step (f) indicates that the antibody is capable of specifically inhibiting fusion of the macrophage-tropic primary isolate of HIV-1 to CD4+ cells, but not capable of specifically inhibiting the fusion of a T cell-tropic isolate of HIV-1 to the CD4+ cells,

wherein the monoclonal antibody is further capable under identical conditions of (a) specifically inhibiting 67% or greater of fusion of a CD4+ PM-1 cell to a HeLa cell expressing envelope glycoprotein from HIV-1_{JR-FL}, and (b) inhibiting 18% or less of fusion of a CD4+ SUP-T1 cell to a HeLa cell expressing envelope protein from HIV-1_{LAI}, wherein the antibody (i) does not cross-react with HIV-1 envelope glycoprotein or CD4, (ii) reacts with an antigen on the surface of a PM-1 cell, and (iii) does not react with an antigen on the surface of a SUP-T1 cell.

Claim 16 (currently amended): A [[An]] monoclonal antibody

capable of specifically inhibiting the fusion of a macrophage-tropic primary isolate of HIV-1 with a CD4+ cell susceptible to infection by a macrophage-tropic primary isolate of HIV-1, but not capable of inhibiting fusion of a T cell-tropic isolate of HIV-1 to such CD4+ cell, wherein these characteristics of the antibody can be determined by the following method:

a) contacting (i) a first appropriate CD4+ cell, which is labeled with a first dye, with (ii) a cell expressing the HIV-1 envelope glycoprotein of the macrophage-tropic primary isolate of HIV-1 on its surface, which is labeled with a second dye, in the presence of an excess of the antibody under conditions which would normally permit the fusion of the CD4+ cell to the cell expressing the HIV-1 envelope glycoprotein on its surface in the absence of the antibody, the first and second dyes being selected so as to allow resonance energy transfer between the dyes;

b) exposing the product of step (a) to conditions which would result in resonance energy transfer if fusion has occurred; and

c) determining whether there is a reduction of resonance energy transfer, when compared with the resonance energy transfer in the absence of the antibody;

d) contacting (i) a second appropriate CD4+ cell, which is labeled with a first dye, with (ii) a cell expressing the HIV-1 envelope glycoprotein of a T-cell tropic isolate of HIV-1 on its surface, which is labeled with a second dye, in the presence of an excess of the antibody under conditions which would normally permit the fusion of the CD4+ cell to the cell expressing the HIV-1 envelope glycoprotein on its surface in the absence of the antibody, the first and second dyes being selected so as to allow resonance energy transfer between the dyes;

e) exposing the product of step (d) to conditions which would result in resonance energy transfer if fusion has occurred;

f) determining whether there is a reduction of resonance energy transfer, when compared with the resonance energy transfer in the absence of the antibody; and

g) comparing the determination made in step (c) with the determination made in step (f), wherein a decrease in transfer in step (c) but not in step (f) indicates that the antibody is capable of specifically inhibiting fusion of the macrophage-tropic primary isolate of HIV-1 to CD4+ cells, but not capable of specifically inhibiting the fusion of a T cell-tropic isolate of HIV-1 to the CD4+ cells,

wherein the monoclonal antibody is further capable under identical conditions of (a) specifically inhibiting 67% or greater of fusion of a CD4+ PM-1 cell to a HeLa cell expressing envelope glycoprotein from HIV-1_{JR-FL}, and (b) inhibiting 18% or less of fusion of a CD4+ SUP-T1 cell to a HeLa cell expressing envelope protein from HIV-1_{LAI}, wherein the antibody (i) does not cross-react with HIV-1 envelope glycoprotein or CD4, (ii) reacts with an antigen on the surface of a PM-1 cell, and (iii) does not react with an antigen on the surface of a SUP-T1 cell.

Claim 17 (currently amended): A method of inhibiting fusion of a macrophage-tropic primary isolate of HIV-1 with a CD4+ cell susceptible to infection by a macrophage-tropic primary isolate of HIV-1, but not capable of inhibiting fusion of a T cell-tropic isolate of HIV-1 to such CD4+ cell, which comprises contacting the CD4+ cell with an amount of [[an]] the monoclonal antibody of claim 16 capable of specifically inhibiting such fusion so as to thereby inhibit such fusion.